

AMENDMENT

In the Claims:

1. (Cancelled)

80. (New): An energy transfer dye comprising:

a xanthene donor dye capable of absorbing light at a first wavelength and emitting excitation energy in response thereto;

B' a 4,7-dichlororhodamine acceptor dye capable of absorbing the excitation energy emitted by the donor dye and fluorescing at a second wavelength in response thereto; and

a non-nucleosidic linker linking the 5- or 6-ring position of the donor dye to the 5- or 6-ring position of the acceptor dye.

81. (New): The energy transfer dye of Claim 80 in which the donor dye is a fluorescein dye.

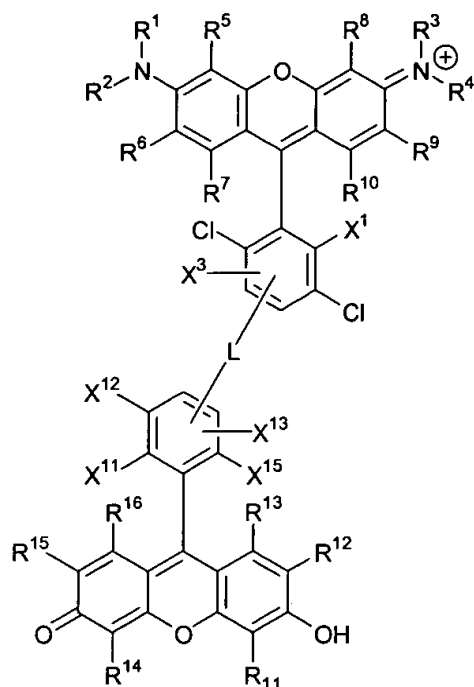
82. (New): The energy transfer dye of Claim 80 in which the linker has a backbone that is less than 9 atoms in length.

83. (New): The energy transfer dye of Claim 80 in which the linker comprises a functional group selected from an alkene, a diene, an alkyne, a five membered ring having at least one unsaturated bond, a six membered ring having at least one unsaturated bond and a fused ring structure.

84. (New): The energy transfer dye of Claim 80 which further comprises a linking group suitable for attaching the energy transfer dye to another substance.

85. (New): The energy transfer dye of Claim 84 in which the linking group is attached to the 4'-position of the 4,7-dichlororhodamine acceptor dye.

86. (New): The energy transfer dye of Claim 80 which comprises the structure:



wherein:

R^1 , R^2 , R^3 and R^4 are each, independently of one another, selected from hydrogen and alkyl, or alternatively R^1 and R^5 , R^2 and R^6 , R^3 and R^8 and/or R^4 and R^9 may be taken together with the atoms to which they are bonded to form a 5, 6 or 7-membered ring;

R^5 , R^6 , R^7 , R^9 and R^{10} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^6 and R^7 and/or R^9 and R^{10} may be taken together with the atoms to which they are bonded to form a benzo group;

R^8 is selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl, substituted phenyl and linking group;

X^1 and X^3 are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy;

L is the linker linking the donor and acceptor dyes;

R^{11} , R^{12} , R^{13} , R^{15} and R^{16} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate,

sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^{12} and R^{13} and/or R^{15} and R^{16} may be taken together with the atoms to which they are bonded to form a benzo group;

R^{14} is selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl, substituted phenyl and linking group; and

X^{11} , X^{12} , X^{13} and X^{15} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy.

87. (New): A fluorescently-labeled reagent comprising a reagent and an energy transfer dye, wherein the energy transfer dye comprises:

a xanthene donor dye capable of absorbing light at a first wavelength and emitting excitation energy in response thereto;

a 4,7-dichlororhodamine acceptor dye capable of absorbing the excitation energy emitted by the donor dye and fluorescing at a second wavelength in response thereto; and

a non-nucleosidic linker linking the 5- or 6-ring position of the donor dye to the 5- or 6-ring position of the acceptor dye,

and wherein the energy transfer dye is covalently linked to the reagent.

88. (New): The fluorescently-labeled reagent of Claim 87 in which the reagent is selected from the group consisting of proteins, polypeptides, polysaccharides, nucleosides/tides, oligonucleotides, oligonucleotide analogs, lipids, solid supports and organic and inorganic polymers.

89. (New): The fluorescently-labeled reagent of Claim 88 in which the reagent is a nucleoside/tide.

90. (New): The fluorescently labeled nucleoside/tide of Claim 89 in which the energy transfer dye is covalently linked to the nucleobase of the nucleoside/tide at the 4'-position of the donor or acceptor dye.

91. (New): The fluorescently labeled nucleoside/tide of Claim 90 in which the energy transfer dye is covalently linked to the nucleobase of the nucleoside/tide by way of an acetylenic amido or alkenic amido linkage.

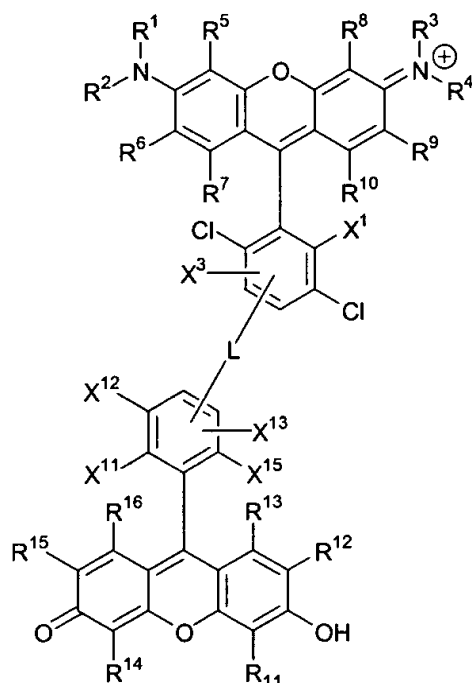
92. (New): The fluorescently labeled nucleoside/tide of Claim 91 in which the acetylenic amido or alkenic amido linkage is selected from $-C\equiv C-CH_2-NH-C(O)-$, 3-amino-1-propyn-1-yl, $-C\equiv C-CH_2-NH-C(O)-(CH_2)_5-C(O)-$, $-C=CH-C(O)-NH-(CH_2)_5-NH-C(O)-$ and $-C\equiv C-CH_2-O-CH_2-CH_2-NR-$, where R is hydrogen, a protecting group or alkyl.

93. (New): The fluorescently-labeled nucleoside/tide of any one of Claims 89-92 in which the donor dye is a fluorescein.

94. (New): The fluorescently-labeled nucleoside/tide of any one of Claims 89-92 in which the linker has a backbone that is less than 9 atoms in length.

95. (New): The fluorescently-labeled nucleoside/tide of any one of Claims 89-92 in which the linker comprises a functional group selected from an alkene, a diene, an alkyne, a five membered ring having at least one unsaturated bond, a six membered ring having at least one unsaturated bond and a fused ring structure.

96. (New): The fluorescently-labeled nucleoside/tide of any one of Claims 89-92 in which the energy transfer dye comprises the structure:



wherein:

R^1 , R^2 , R^3 and R^4 are each, independently of one another, selected from hydrogen and alkyl, or alternatively R^1 and R^5 , R^2 and R^6 , R^3 and R^8 and/or R^4 and R^9 may be taken together with the atoms to which they are bonded to form a 5, 6 or 7-membered ring;

R^5 , R^6 , R^7 , R^8 , R^9 and R^{10} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^6 and R^7 and/or R^9 and R^{10} may be taken together with the atoms to which they are bonded to form a benzo group;

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 X^1 and X^3 are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy;

L is the linker linking the donor and acceptor dyes;

R^{11} , R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^{12} and R^{13} and/or R^{15} and R^{16} may be taken together with the atoms to which they are bonded to form a benzo group;

X^{11} , X^{12} , X^{13} and X^{15} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy; and

R^8 or R^{14} comprises the attachment to the nucleoside/tide.

97. (New): The fluorescently labeled nucleoside/tide of Claim 96 in which the nucleoside/tide is a 2'-deoxyribonucleoside.

98. (New): The fluorescently labeled nucleoside/tide of Claim 96 in which the nucleoside/tide is a 2'-deoxyribonucleotide.

99. (New): The fluorescently labeled nucleoside/tide of Claim 98 in which the 2'-deoxyribonucleotide is a 2'-deoxyribonucleoside-5'-triphosphate.

100. (New): The fluorescently labeled nucleoside/tide of Claim 96 in which the nucleoside/tide is a terminating nucleotide.

101. (New): The fluorescently labeled nucleoside/tide of Claim 100 in which the terminating nucleotide is a 2',3'-dideoxynucleoside-5'-triphosphate.

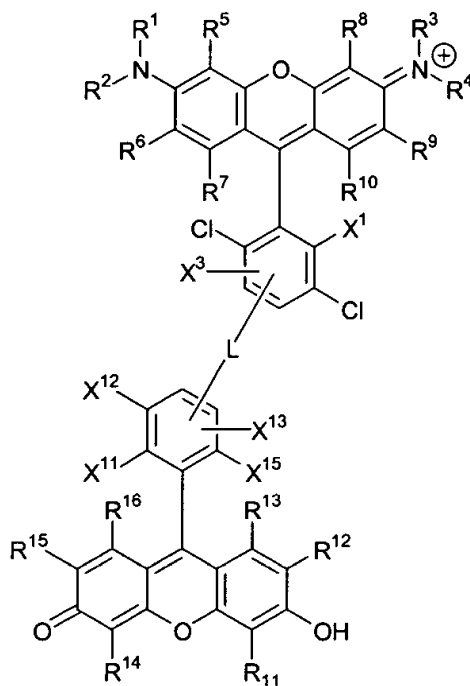
102. (New): A fluorescently-labeled reagent of Claim 88 in which the reagent is an oligonucleotide or oligonucleotide analog.

103. (New): The fluorescently-labeled oligonucleotide or analog of Claim 102 in which the energy transfer dye is attached to the 5'-terminus.

104. (New): The fluorescently-labeled oligonucleotide or analog of Claim 102 in which the energy transfer dye is attached to the 3'-terminus.

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105. (New): The fluorescently-labeled oligonucleotide or analog of Claim 102 in which the energy transfer dye is attached to a nucleobase.

106. (New): The fluorescently-labeled oligonucleotide or analog of any one of Claims 102-105 in which the energy transfer dye comprises the structure:



wherein:

R^1 , R^2 , R^3 and R^4 are each, independently of one another, selected from hydrogen and alkyl, or alternatively R^1 and R^5 , R^2 and R^6 , R^3 and R^8 and/or R^4 and R^9 may be taken together with the atoms to which they are bonded to form a 5, 6 or 7-membered ring;

R^5 , R^6 , R^7 , R^8 , R^9 and R^{10} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^6 and R^7 and/or R^9 and R^{10} may be taken together with the atoms to which they are bonded to form a benzo group;

X^1 and X^3 are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy;

L is the linker linking the donor and acceptor dyes;

R^{11} , R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^{12} and R^{13} and/or R^{15} and R^{16} may be taken together with the atoms to which they are bonded to form a benzo group;

X^{11} , X^{12} , X^{13} and X^{15} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy; and

R^8 or R^{14} comprises the attachment to the oligonucleotide or analog.

107. (New): A method of forming a fluorescently labeled oligonucleotide, comprising the step of enzymatically extending an oligonucleotide primer in the presence of a template nucleic acid and nucleotide triphosphates, wherein the oligonucleotide primer or at least one of the nucleotide triphosphates is labeled with an energy transfer dye comprising:

(i) a xanthene donor dye capable of absorbing light at a first wavelength and emitting excitation energy in response thereto;

(ii) a 4,7-dichlororhodamine acceptor dye capable of absorbing the excitation energy emitted by the donor dye and fluorescing at a second wavelength in response thereto; and

(iii) a non-nucleosidic linker linking the 5- or 6-ring position of the donor dye to the 5- or 6-ring position of the acceptor dye,

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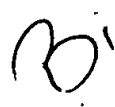
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wherein:

R^1 , R^2 , R^3 and R^4 are each, independently of one another, selected from hydrogen and alkyl, or alternatively R^1 and R^5 , R^2 and R^6 , R^3 and R^8 and/or R^4 and R^9 may be taken together with the atoms to which they are bonded to form a 5, 6 or 7-membered ring;

R^5 , R^6 , R^7 , R^8 , R^9 and R^{10} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^6 and R^7 and/or R^9 and R^{10} may be taken together with the atoms to which they are bonded to form a benzo group;

X^1 and X^3 are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy;

L is the linker linking the donor and acceptor dyes;

R^{11} , R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^{12} and R^{13} and/or R^{15} and R^{16} may be taken together with the atoms to which they are bonded to form a benzo group;

X^{11} , X^{12} , X^{13} and X^{15} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy; and

the energy transfer dye is attached to the oligonucleotide primer or the at least one nucleotide triphosphate at position R^8 or R^{14} .

113. (New): The method of Claim 107 in which the oligonucleotide primer is labeled with the energy transfer dye.

114. (New): The method of Claim 107 in which the at least one nucleotide triphosphate is labeled with the energy transfer dye.

115. (New): The method of Claim 107 in which the enzymatic extension is carried out with a polymerase.

116. (New): A method of analyzing a nucleic acid, comprising the steps of:

forming a plurality of differently sized fluorescently labeled extended oligonucleotide primers;

separating the fluorescently labeled extended oligonucleotide primers based upon their sizes; and

detecting the fluorescently labeled extended primers based upon their fluorescence, wherein the fluorescent label of at least one of the fluorescently labeled extended oligonucleotide primers is a fluorescent energy transfer dye comprising:

(i) a xanthene donor dye capable of absorbing light at a first wavelength and emitting excitation energy in response thereto;

(ii) a 4,7-dichlororhodamine acceptor dye capable of absorbing the excitation energy emitted by the donor dye and fluorescing at a second wavelength in response thereto; and

(iii) a non-nucleosidic linker linking the 5- or 6-ring position of the donor dye to the 5- or 6-ring position of the acceptor dye,

wherein the energy transfer dye is linked to the extended oligonucleotide primer at the 4'-position of the donor dye or the acceptor dye.

117. (New): The method of Claim 116 in which the plurality of differently sized fluorescently labeled extended oligonucleotide primers are formed by enzymatically extending an oligonucleotide primer including the energy transfer dye in the presence of a template nucleic acid, nucleotide triphosphates and at least one terminating nucleotide such that the primer is extended until the terminating nucleotide is incorporated into the extended primer.

118. (New): The method of Claim 116 in which the plurality of differently sized fluorescently labeled extended oligonucleotide primers are formed by enzymatically extending an oligonucleotide primer in the presence of a template nucleic acid, nucleotide triphosphates and at least one terminating nucleotide including the energy transfer dye such that the primer is extended until the terminating nucleotide is incorporated into the extended primer.

119. (New): The method of Claim 118 in which the enzymatic extension is carried out in the presence of four different terminating nucleotides, each of which terminates primer extension at a different template nucleotide, and wherein each of the different terminating nucleotides includes a different, spectrally resolvable fluorescent dye, at least one of which is the energy transfer dye.

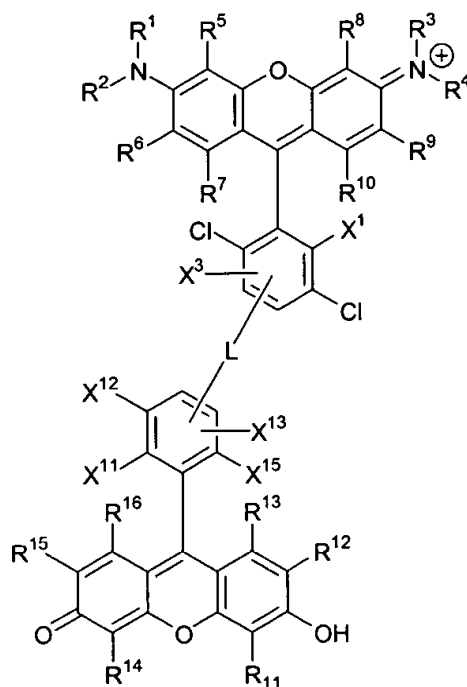
120. (New): The method of Claim 119 in which the donor dye of the energy transfer dye is a fluorescein dye.

121. (New): The method of Claim 119 in which the linker of the energy transfer dye has a backbone that is less than 9 atoms in length.

122. (New): The method of Claim 119 in which the linker of the energy transfer dye comprises a functional group selected from an alkene, a diene, an alkyne, a five membered ring having at least one unsaturated bond, a six membered ring having at least one unsaturated bond and a fused ring structure.

123. (New): The method of Claim 119 in which the energy transfer dye is attached to the terminating nucleotide at the 4'-position of the 4,7-dichlororhodamine acceptor dye.

124. (New): The method of Claim 119 in which the energy transfer dye comprises the structure:



wherein:

R^1 , R^2 , R^3 and R^4 are each, independently of one another, selected from hydrogen and alkyl, or alternatively R^1 and R^5 , R^2 and R^6 , R^3 and R^8 and/or R^4 and R^9 may be taken together with the atoms to which they are bonded to form a 5, 6 or 7-membered ring;

R^5 , R^6 , R^7 , R^8 , R^9 and R^{10} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^6 and R^7 and/or R^9 and R^{10} may be taken together with the atoms to which they are bonded to form a benzo group;

X^1 and X^3 are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy;

L is the linker linking the donor and acceptor dyes;

R^{11} , R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^{12} and R^{13} and/or R^{15} and R^{16} may be taken together with the atoms to which they are bonded to form a benzo group;

X^{11} , X^{12} , X^{13} and X^{15} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy; and

the energy transfer dye is attached to the terminating nucleotide at position R^8 or R^{14} .

125. (New): The method of Claim 119 in which each different terminating nucleotide includes a different, spectrally resolvable energy transfer dye comprising:

(i) a xanthene donor dye capable of absorbing light at a first wavelength and emitting excitation energy in response thereto;

(ii) a 4,7-dichlororhodamine acceptor dye capable of absorbing the excitation energy emitted by the donor dye and fluorescing at a second wavelength in response thereto; and

(iii) a non-nucleosidic linker linking the 5- or 6-ring position of the donor dye to the 5- or 6-ring position of the acceptor dye,

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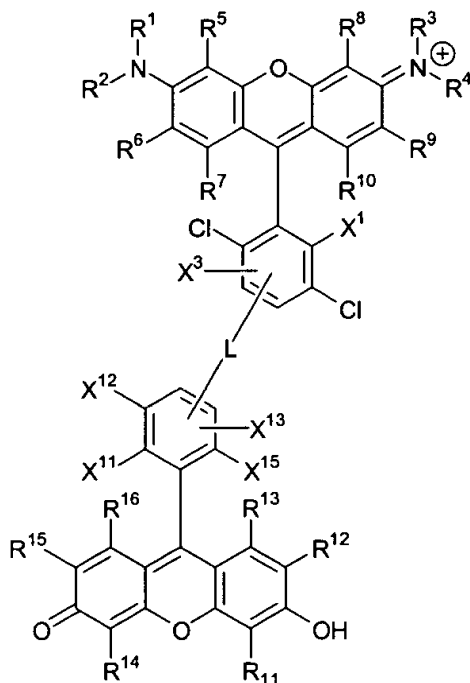
126. (New): The method of Claim 125 in which the donor dye of each energy transfer dye is a fluorescein dye.

127. (New): The method of Claim 125 in which the linker of each energy transfer is a backbone that is less than 9 atoms in length.

128. (New): The method of Claim 125 in which the linker of each energy transfer comprises a functional group selected from an alkene, a diene, an alkyne, a five membered ring having at least one unsaturated bond, a six membered ring having at least one unsaturated bond and a fused ring structure.

129. (New): The method of Claim 125 in which each energy transfer dye is attached to a respective terminating nucleotide at the 4'-position of the 4,7-dichlororhodamine acceptor

130. (New): The method of Claim 125 in which each energy transfer dye comprises



wherein:

R^1 , R^2 , R^3 and R^4 are each, independently of one another, selected from hydrogen and alkyl, or alternatively R^1 and R^5 , R^2 and R^6 , R^3 and R^8 and/or R^4 and R^9 may be taken together with the atoms to which they are bonded to form a 5, 6 or 7-membered ring;

R^5 , R^6 , R^7 , R^8 , R^9 and R^{10} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^6 and R^7 and/or R^9 and R^{10} may be taken together with the atoms to which they are bonded to form a benzo group;

X^1 and X^3 are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy;

L is the linker linking the donor and acceptor dyes;

R^{11} , R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^{12} and R^{13} and/or R^{15} and R^{16} may be taken together with the atoms to which they are bonded to form a benzo group;

X^{11} , X^{12} , X^{13} and X^{15} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy; and

the energy transfer dye is attached to its respective terminating nucleotide at position R^8 or R^{14} .

131. (New): The method of Claim 130 in which each energy transfer dye comprises the same donor dye.

132. (New): The method of Claim 119 in which the enzymatic extension is carried out with a polymerase.

133. (New): The method of Claim 119 in which the nucleotide triphosphates comprise a mixture of dATP, dCTP, dGTP and dTTP.

134. (New): The method of Claim 119 in which the four different terminating nucleotides comprises a mixture of ddATP, ddCTP, ddGTP and ddTTP.

135. (New): The method of Claim 119 further comprising the step of determining the sequence of the nucleic acid.

136. (New): A kit for sequencing a nucleic acid, comprising a set of four different terminating nucleotides, each of which terminates a template-dependent primer extension reaction at a different template nucleotide and includes a fluorescent label capable of producing a detectable, spectrally resolvable fluorescent signal, wherein at least one of the fluorescent labels is an energy transfer dye comprising:

a xanthene donor dye capable of absorbing light at a first wavelength and emitting excitation energy in response thereto;

a 4,7-dichlororhodamine acceptor dye capable of absorbing the excitation energy emitted by the donor dye and fluorescing at a second wavelength in response thereto; and

B' a non-nucleosidic linker linking the 5- or 6-ring position of the donor dye to the 5- or 6-ring position of the acceptor dye,

wherein the energy transfer dye is linked to the terminating nucleotide at the 4'-position of the donor dye or the acceptor dye.

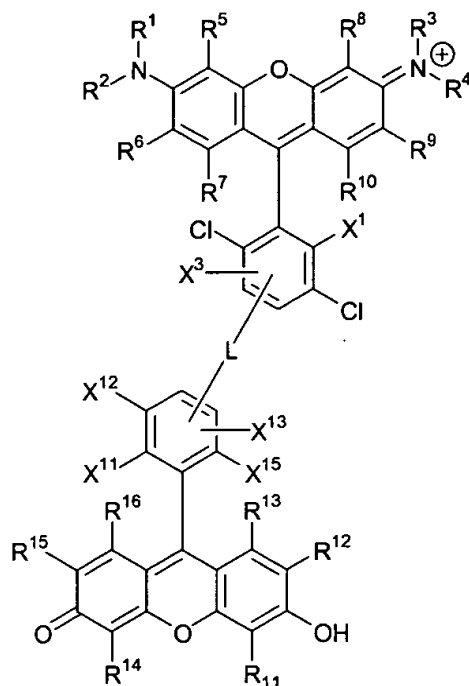
137. (New): The kit of Claim 136 in which the donor dye is a fluorescein dye.

138. (New): The kit of Claim 136 in which the linker has a backbone that is less than 9 atoms in length.

139. (New): The kit of Claim 136 in which the linker comprises a functional group selected from an alkene, a diene, an alkyne, a five membered ring having at least one unsaturated bond, a six membered ring having at least one unsaturated bond and a fused ring structure.

140. (New): The kit of Claim 136 in which the energy transfer dye is attached to the terminating nucleotide at the 4'-position of the 4,7-dichlororhodamine acceptor dye.

141. (New): The kit of Claim 136 in which the energy transfer dye comprises the structure:



wherein:

R^1 , R^2 , R^3 and R^4 are each, independently of one another, selected from hydrogen and alkyl, or alternatively R^1 and R^5 , R^2 and R^6 , R^3 and R^8 and/or R^4 and R^9 may be taken together with the atoms to which they are bonded to form a 5, 6 or 7-membered ring;

R^5 , R^6 , R^7 , R^8 , R^9 and R^{10} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^6 and R^7 and/or R^9 and R^{10} may be taken together with the atoms to which they are bonded to form a benzo group;

X^1 and X^3 are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy;

L is the linker linking the donor and acceptor dyes;

R^{11} , R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate,

sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R¹² and R¹³ and/or R¹⁵ and R¹⁶ may be taken together with the atoms to which they are bonded to form a benzo group;

X¹¹, X¹², X¹³ and X¹⁵ are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy; and

the energy transfer dye is attached to the terminating nucleotide at position R⁸ or R¹⁴.

142. (New): The kit of Claim 136 in which the labels of the terminating nucleotides are excitable by a single light source.

143. (New): The kit of Claim 136, wherein in each of the four different terminating nucleotides, the fluorescent label is an energy transfer dye comprising:

a xanthene donor dye capable of absorbing light at a first wavelength and emitting excitation energy in response thereto;

a 4,7-dichlororhodamine acceptor dye capable of absorbing the excitation energy emitted by the donor dye and fluorescing at a second wavelength in response thereto; and

a non-nucleosidic linker linking the 5- or 6-ring position of the donor dye to the 5- or 6-ring position of the acceptor dye,

wherein each energy transfer dye is linked to its respective terminating nucleotide at the 4'-position of the donor dye or the acceptor dye.

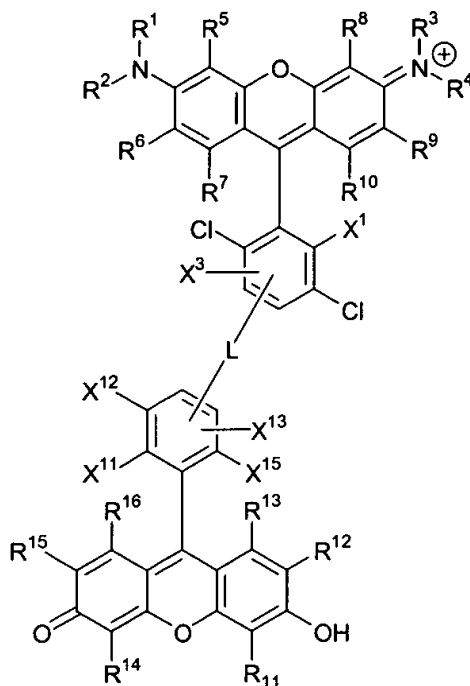
144. (New): The kit of Claim 143 in which each donor dye is a fluorescein dye.

145. (New): The kit of Claim 143 in which each linker has a backbone that is less than 9 atoms in length.

146. (New): The kit of Claim 143 in which each linker comprises a functional group selected from an alkene, a diene, an alkyne, a five membered ring having at least one unsaturated bond, a six membered ring having at least one unsaturated bond and a fused ring structure.

147. (New): The kit of Claim 143 in which each energy transfer dye is attached to its respective terminating nucleotide at the 4'-position of the 4,7-dichlororhodamine acceptor dye.

148. (New): The kit of Claim 143 in which each energy transfer dye comprises the structure:



wherein:

R^1 , R^2 , R^3 and R^4 are each, independently of one another, selected from hydrogen and alkyl, or alternatively R^1 and R^5 , R^2 and R^6 , R^3 and R^8 and/or R^4 and R^9 may be taken together with the atoms to which they are bonded to form a 5, 6 or 7-membered ring;

R^5 , R^6 , R^7 , R^8 , R^9 and R^{10} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^6 and R^7 and/or R^9 and R^{10} may be taken together with the atoms to which they are bonded to form a benzo group;

X^1 and X^3 are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy;

L is the linker linking the donor and acceptor dyes;

R^{11} , R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate,

sulfone, amino, ammonium, amido, nitrile, alkoxy, phenyl and substituted phenyl, or alternatively, R^{12} and R^{13} and/or R^{15} and R^{16} may be taken together with the atoms to which they are bonded to form a benzo group;

X^{11} , X^{12} , X^{13} and X^{15} are each, independently of one another, selected from hydrogen, fluorine, chlorine, bromine, iodine, carboxyl, alkyl, alkene, alkyne, sulfonate, sulfone, amino, ammonium, amido, nitrile and alkoxy; and

each energy transfer dye is attached to its respective terminating nucleotide at position R^8 or R^{14} .

149. (New): The kit of Claim 143 in which each energy transfer dye comprises the same donor dye.

150. (New): The kit of Claim 136 or 143 which further includes a set of four nucleoside triphosphates capable of extending an oligonucleotide primer in a template-dependent primer extension reaction.

151. (New): The kit of Claim 150 which further includes a polymerase.